City of Santa Barbara

Building & Safety Division

EROSION/SEDIMENTATION CONTROL POLICY

Effective July 1, 2003

Updated 11/15/2004 11:37:00 AM Last saved by Larry Cassidy

EROSION / SEDIMENTATION CONTROL
AND
STORMWATER QUALITY MANAGEMENT PROGRAM

1. Introduction

This Policy identifies standards for erosion prevention, sediment control and stormwater quality management during construction, and long-term post-construction site stabilization. The provisions of this section are intended to prevent and reduce adverse impacts to the drainage system and creeks of the City of Santa Barbara. In combination with other state, federal, and local laws and ordinances, these requirements are intended to protect the beneficial uses of waters within the watershed. Also, see the City of Santa Barbara Public Works Department's Procedures for the Control of Runoff into Storm Drains and Watercourses for Public Works Construction requirements.

- Erosion prevention techniques are designed to protect soil particles from the force of rain and wind so that they will not erode. These techniques include, but are not limited to such things as construction scheduling, ground cover and plantings, and installation of erosion control matting.

- Sediment control measures are designed to capture soil particles after they have been dislodged and attempt to retain the soil particles on-site. These measures include, but are not limited to silt fences, sediment barriers, and settling or sediment detention basins. Both erosion prevention techniques and sediment control measures have appropriate uses; however, it has been shown that sediment control measures are less effective in preventing soil movement and water quality impacts than erosion prevention techniques.

- Use of ***Standard Erosion Control Measures*** (see Sect. 5) would be required for any grading or land clearing for a development project on slopes less than or equal to 15%, and where the project area is less than or equal to 1.0 acre. A listing of the Standard Erosion Control Measures to be utilized shall appear either attached to the grading plan (if one is required to be submitted), or on a plot plan (if no grading plan is required), as part of the Building , Grading, or Public Works Permit application. The site may be field checked to verify that there are no critical (unstable or highly erosive) areas on the site and the Standard Erosion Control Measures proposed are adequate.

- For project areas greater than 1.0 acre, on slopes greater than 15%, projects within the Hillside Design District or other critical areas, as determined on a case-by-case basis, a ***Detailed Erosion Control Plan*** (see Sect. 9) is required. Most projects located in the Hillside Design District will be considered to be in a potentially critical area requiring completion of a Detailed Erosion Control Plan.

2. Authorized Personnel

Persons authorized to prepare the Detailed Erosion Control Plans include:

- A Certified Professional Soil Erosion and Sediment Control Specialist,
- A California Licensed Civil Engineer,
- A California Licensed Landscape Architect,
- A California Registered Geologist, certified as an Engineering Geologist,
- A California Licensed Architect.

3. Slope Determination

Before Standard Erosion Control Measures can be applied to a project, it must be determined that the slope is not more than 15%. This is calculated according to the following procedures:

"Average slope" of a parcel of land or any portion thereof shall be computed by applying the formula (S=.00229 IL divided by A) to the natural slope of the land, before grading is commenced as determined from a topographic map conforming to National Mapping Standards and having a scale of not less than 1 inch equals 200 feet and a contour interval of not less than five feet (5'). The letters in this formula shall have the following significance:

S = The average slope of the land in percent.

I = The contour interval in feet.

L = The combined length of all contours in feet, excluding the length of contours in drainage channels and in natural water courses below the 25 year flood level.

A = The net area of parcel or portion thereof, in acres, after deducting all areas in drainage channels below the 25 year flood level, for which the slope is to be determined. (Ord. 4726, 1991; Ord. 3753, 1975; Ord. 3710, 1974; Ord. 2585, 1957.)

The City may require topographical contour mapping prepared by a licensed professional in order to determine slope.

4. Erosion Control and Stormwater Management Manuals

The ***Association of Bay Area Governments (ABAG) Manual of Standards for Erosion and Sediment Control (Second Edition, May 1995)*** should be adopted as the erosion control standards manual for planning and design in the City of Santa Barbara. Drawings and design details from this source may be used in submittal of Standard Erosion Control Measures and detailed Erosion Control Plans. Their website may be used for viewing and/or downloading of information.
www.cabmphandbooks.com/construction.asp

The ***Erosion and Sediment Control Field Manual*** available from the California Regional Water Quality Control Board, San Francisco Bay Region should be adopted as the manual for use by contractors and City inspectors in the field.

The ***California Stormwater Best Management Practices Handbooks*** available from the Stormwater Quality Task Force, March 1993, should be adopted for use in preparing Stormwater Pollution Prevention Plans (SWPPP). Separate handbooks are available for: 1) Construction Activity; 2) Industrial/Commercial; and, 3) Municipal work areas.

In addition several commercial publications and design drawings are available for preparation of Erosion Control Plans, such as Erosion Draw.

5. Standard Erosion and Sediment Control Measures

The following standard measures for soil erosion and sediment control are to be used on small projects that will implement the standards for parcels less than or equal to 1.0 acre in size, or on slopes less than 15%. Such areas cannot be located within critical areas, or within the Hillside Design District.

The techniques and methods contained and prescribed in the latest addition of the *Association of Bay Area Governments Manual of Standards for Erosion and Sediment Control Plans*, should be used along with the following additional guidance and requirements:

Gravel Construction Entrance. A gravel construction entrance is generally required where vehicle traffic is anticipated off of existing paved or graveled roads. If there is more than one vehicle access point, a

gravel construction entrance should be installed at each entrance. The responsibility for field design to meet site conditions, and maintenance of the construction entrances remains with the property owner or construction contractor. The owner/contractor shall remain responsible for the clean-up of any mud or dirt that is tracked onto streets or paved areas, even with the installation of gravel construction entrances.

Vehicles or equipment shall not enter a property adjacent to a creek, watercourse, or storm water facility unless adequate measures are installed to prevent physical erosion into the water.

Catch Basin Protection. A filter system shall be used on catch basins (drop inlets) in public and private streets, and parking areas as a means of sediment control. Alternate methods will require the approval of the City.

Sediment Filters/Barriers. For all projects, a silt fence or straw wattle dike shall be installed along the down slope edge of the disturbed area, prior to the commencement of grading. The sediment filter structures will be located so that all runoff from the construction site is filtered, or passes through a sediment detention basin prior to crossing a property line, entering a creek or entering the City storm drain system. Sediment filter structures are to be inspected regularly by City Inspection staff during inspections scheduled by the Contractor or Engineer of Record, and sediment removed when the depth of sediment is no more than one half the height of the structure. Silt fences and straw wattles shall be installed according to the standard references cited.

Straw wattles can be used as dikes to stabilize temporary channel flow lines or as a perimeter filter barrier. Straw wattles must be installed in a trench, staked and backfilled if they are to be effective in reducing flow velocity and filtering sediment from runoff.

Straw wattles should not remain in place more than 12 months after installation unless it can be determining significant deterioration has not occurred. When used as a perimeter filter, sediment should be removed when material is within 3 inches of the top of any wattle.

Silt fences should be installed where sediment from sheet flow or rill and gully erosion will enter directly onto adjacent property. When installing, it is important the fabric material be anchored into a trench and backfilled.

Maintenance of filter fences is similar to that of straw wattles in that the fabric must be inspected and needed repairs implemented after every storm event. Sediment deposits should be removed when material reaches no more than a depth of one-half the fence height.

Plastic Sheeting Plastic sheeting shall generally not be used as an erosion control measure over large areas. Plastic sheeting may be used to protect small, highly erodible areas, or to protect temporary stockpiles of material. If plastic sheeting is used, the path of concentrated flow from the plastic must be protected.

Existing Vegetation and Revegetation. As far as is practicable, existing vegetation shall be protected and left in place, in accordance with the clearing limits shown on the approved Building, Grading, or Public Works and Erosion Control Plans. The exception is where exotic plant materials are to be removed, or fire fuels reduced in accordance with an approved Plan. Work areas shall be carefully located and marked to reduce potential damage. Where existing vegetation has been removed, or the original land contours disturbed, the site shall be revegetated, and the vegetation established, as soon as practicable, but no later than **October 15.**

Slope Protection: Hydroseeding alone will normally not be considered satisfactory erosion protection for disturbed slopes steeper than 4V:1H. These areas should also be protected using straw and tackifier. The installation of erosion control blankets should be considered for all disturbed slopes steeper than 2.5H:1V and greater than 20 feet in slope length. Installation of straw wattles staked on contour should be considered for all slopes steeper than 4H:1V, with slope lengths greater than 30 feet. Straw wattles or silt

fencing should be installed at the toe of all slopes steeper than 4H:1V, and along (just below) top of bank along all creeks.

Wet Weather Measures. On sites where vegetation and ground cover have been removed from more than 0.5 acre of land, vegetative ground cover shall be planted on or before **September 15** with the ground cover established by **October 15**. As an alternative, if a protective ground cover is not established by **October 15**, the open areas shall be protected through the winter with straw mulch, erosion blankets, the installation of additional straw wattles, or other method(s) approved by the City.

Seeding. Seeding shall be as follows, or as recommended by a California Licensed Landscape Architect or a Certified Professional Soil Erosion and Sediment Control Specialist.

SEED MIX ONE (Application rate = 40 kg/ha or 35 lb/ac)		**SEED MIX TWO** Application rate=40 kg/ha or 35 lbs/acre)	
blando brome	40%	blando brome	35%
zorro annual fescue	8%	rose clover	20%
lana vetch	12%	annual ryegrass	15%
rose clover	15%	crimson clover	10%
crimson clover	15%	creeping red fescue	5%
sub clover	10%	zorro annual fescue	5%
TOTAL	100%	TOTAL	100%

Fertilizer

12-12-12 450 kg/ha (400 lb/ac), or 15-15-15 340 kg/ha (300 lb/ac), or 16-20-0 340 kg/ha (300 lb/ac).

Mulch

Straw 3,400 kg/ha (3,000 lb/ac), or wood fiber (if hydroseeded) 2,300 kg/ha (2,000 lb/ac)

6. Protection Measure Removal

The erosion prevention and sediment control measures shall remain in place and be maintained in good condition until all disturbed soil areas are permanently stabilized by installation and establishment of landscaping, grass, mulching, or are otherwise covered and protected from erosion.

7. Standard Erosion Control Measures Submittal Requirements

The submittal for the proposed use of **Standard Erosion Control Measures** can be brief and shall include a plot plan or grading plan, providing the following information:

- Site location; assessor parcel number and address (if known).
- Property owners name, address and phone number, including emergency number.
- Building contractors name, address and phone number.
- General locations where measures will be installed.
- Installation details shall be attached to the plot plan (these can be copied from the Standard references).

8. Review and Field Checks of Standard Erosion Control Measures

The City will review the submitted grading or plot plan with Standard Erosion and Sediment Control Measures to make sure that all information requested is on the plans. If the project is to be completed less than 2 months before the rainy season (after August 15) the measures must be shown on the plans to avoid any problems in the future if the schedule should stop for some unforeseen circumstance.

Depending upon the timing of the project, there will be one to four field inspections.

Projects may require a Pre-Construction meeting between the Applicant and the City Inspection staff to discuss proposed erosion control and stormwater protection measures, implementation schedule, frequency and nature of inspections. Inspection staff will forward copies of all inspection documentation completed by deputy inspectors if deemed necessary (some inspections may be conducted by the Engineer or third party independent inspectors).

If the project is completed over the summer (by August 15) and includes landscaping, the regular final inspection will include the Standard Erosion Control Measures inspection. If the project is not completed by the onset of the rainy season, then a specific inspection will be made between September 15 and October 1. All temporary erosion and sediment control measures must be purchased and mobilized on-site by October 1 (including additional sand bags, covered straw bales and straw wattles or silt fencing for emergency and remedial repairs and maintenance) , and are to be installed by October 15. Other field inspections will be made to assure that revegetation has occurred and is growing, and adequate maintenance is taking place (various times from early November through March).

9. Detailed Erosion Control Plan Guidelines

A Detailed Erosion Control Plan submittal will be required for sites greater than 1.0 acre, or for buildings or other site disturbance proposed for slopes over 15%, or projects located within critical areas, as determined on a case-by-case basis*.* A copy of the Notice of Intent (NOI) that was submitted to the Calif. State Regional Water Quality Control Board must accompany the Detailed Erosion Control Plan. The Detailed Erosion Control Plan submittal must comply with all of the requirements for the Standard Erosion Control Measures and also include a written narrative and detailed site plan and typical drawings and details.

10. Narrative

Written narrative (to be included with Plan) on letterhead or signed plan sheet of person responsible for Plan preparation should include:

- Proposed schedule of grading activities and infrastructure milestones in a chronological format, including dates for beginning of phased grading areas and dates that areas will be stabilized. For example, easterly slope rough grading complete, streets graded, storm sewers and inlets installed, paving complete on Street X, creek outfall structure complete, etc.
- Description of potentially affected areas adjacent to site.
- Description of soils, geology, vegetation and nearby creeks.
- Description of critical areas of high erodibility potential; unstable slopes.
- Description of erosion control measures on slopes, lots, streets, etc.
- Description of sediment detention basins, including design assumption and calculations.
- Description of emergency erosion and sediment control measures to be implemented for storms within 48 hours.
- Name and 24 hour telephone number of person responsible for erosion and sediment control.

11. Site Plan

The site plan shall include the following information:

- Scale, north arrow and legend.
- Vicinity map.

- Watershed boundaries within project.
- Contours and spot elevations indicating runoff patterns before and after grading.
- Critical areas within or near the project (creeks, wetlands, landslides, steep slopes, etc.).
- Limits of clearing and grading.
- Creek top of bank, delineation of Creek Buffer Areas A and B and existing vegetation and any special trees/wetlands to be fenced and protected.
- Location and types of temporary and permanent erosion and sediment control measures.
- Site access locations.
- Signature block for plan preparer.
- Additional plans that may be needed to illustrate narrative addressing stages of construction such as street graded-no storm drains; storm system installed; streets paved; etc.

12. General Erosion and Sediment Control Notes to be Included on Site Plan

The following notes and information should be included on the plan sheets of the Detailed Erosion Control Plan:

- Contractor/Owner: name, address, phone number. It shall be the owner's responsibility to maintain control of the entire construction operations and to keep the entire site in compliance with the soil Erosion Control Plan.

- Civil Engineer, Landscape Architect, or Detailed Erosion Control Plan preparer: name, address, phone number.

- Construction Superintendent: name, address, 24-hour phone number.

- Contractor: name, address, 24-hour phone number.

- This Plan is intended to be used for interim erosion and sediment control only and is not to be used for final elevations or permanent improvements.

- Owner/contractor shall be responsible for monitoring erosion and sediment control measures prior, during, and after storm events. Monitoring includes maintaining a file documenting on-site inspections, problems encountered, corrective actions, and notes and a red-line map of remedial implementation measures.

- Reasonable care shall be taken when hauling any earth, sand, gravel, stone, debris or any hazardous substance over any public street, alley or other public place. Should any blow, spill, or track over and upon said public or adjacent private property, immediate clean-up shall occur.

- Construction entrances shall be installed prior to commencement of grading. All construction traffic entering onto the paved roads must cross the stabilized construction entranceway.

- Sanitary facilities shall be maintained on-site as appropriate.

- During the rainy season, all paved areas shall be kept clear of earth material and debris. All earth stockpiles over 1.5 m^3 (2.0 yd^3) shall be covered by a tarp and ringed with straw bales or silt fencing. The site shall be maintained so as to minimize sediment-laden runoff to any storm drainage system including existing drainage swales and water courses.

- Construction operations shall be carried out in such a manner that erosion and water pollution will be minimized. State and local laws concerning pollution abatement shall be complied with.

- The facilities shown on this plan are designed to control erosion and sediment during the rainy season, **November 1 to April 15.** Facilities are to be operable prior to October 15 of any year.

Grading operations during the rainy season which leave denuded slopes shall be protected with erosion control measures immediately following grading on the slopes. This will include use of straw mulch and tackifier, and erosion control blankets.

- This plan covers only the first winter following grading with assumed site conditions as shown on the Detailed Erosion Control Plan. **Prior to September 15**, the completion of site improvement shall be evaluated and revisions made to this Plan as necessary with the approval of the City. Plans are to be resubmitted for approval prior to **August 15** of each subsequent year until site improvements are accepted by the City.

13. Procedures for Review and Inspection of Detailed Erosion Control Plans

Submission of a **Detailed Erosion Control Plan** must accompany any applicable Public Works, Grading, or Building Permit application. The Public Works Department/Engineering Division will review the submittal in conjunction with the City Community Development Department for compliance with their Procedures for the Control of Runoff into Storm Drains and Watercourses for Public Works construction polluted discharge control requirements..

Work that is within the creek (top of bank to top of bank) will be reviewed by Public Works, but if any included work is on private property, the submittal will also be reviewed by the City's Building and Safety Division (who normally coordinates the routing of projects). Following plan approval, the City Building or Public Works Inspector will: (1) arrange a Pre-Construction meeting to review project scheduling, and proposed erosion control and stormwater management plans and procedures, and implementation dates, (2) make a specific pre-winter erosion control inspection **(by October 15)** to verify that all temporary erosion control measures have been installed according to the approved plan, (3) make at least one interim inspection during the winter rainy period to insure adequate on-going maintenance and repair of the erosion control measures, and that appropriate documentation of remedial measures has occurred, and (4) make a final inspection at project construction completion to verify that all required permanent erosion control measures, including any planting and revegetation elements have been installed according to plan. Compliance inspections will be scheduled by the Applicant/Contractor. On-site building contractor documentation of all on-going Detailed Erosion Control Plan site inspections, maintenance and repair both before and following significant rainfall events will also be checked during these visits (before and after storm-event inspection/repair documentation). Inspections will include:

Initial Inspection. On a site development or any other type of project, the erosion prevention and sediment control measures shall be installed prior to the start of any permitted activity. The permittee shall call the City prior to the foundation inspection of a building for an inspection of the erosion prevention and sediment control measures.

Owner Inspections and Inspection Logs. The owner shall be required to inspect erosion prevention and sediment control measures and provide information on log forms. Inspections shall be completed as required by the Detailed Erosion Control Plan. Logs are to be maintained on-site and available to City inspectors upon request.

Final Inspection. A final erosion control inspection shall be required prior to the sale or conveyance to new property owner(s) or prior to the issuance of a Certificate of Compliance, Occupancy or other final checkpoint, to verify that temporary erosion prevention and sediment control measures have been removed and that permanent measures have been satisfactorily installed.

Copies of Inspections conducted by others shall be submitted to the City's Building and Safety Division in a timely manner following the conclusion of each inspection.

14. Maintenance

The permittee shall maintain the facilities and erosion control measures prescribed in the approved ***Detailed Erosion Control Plan*** so as to continue to be effective during the construction phase, post construction phase, establishment of permanent vegetation, or any other permitted activity. If the facilities and techniques approved in a Detailed Erosion Control Plan are not effective or sufficient as determined by a City site inspection, the permittee shall submit a revised Plan within three working days of written notification by the City of unacceptable site erosion conditions. Upon approval of the revised plan by the City, the permittee shall immediately implement the additional facilities and measures included in the revised plan. In cases where significant erosion is likely to occur, the City may require that the applicant install interim control measures prior to submittal of the revised Erosion Control Plan.